

CAREER COMPETENCIES, IDENTITY, DECISION QUALITY AND MOTIVATION - ESTABLISHING A LINKAGE.

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Abstract

The impacts of career education and guidance among students (ages 12–19) participating in M-Group and G-Group ITI Training in Telangana are the main topic of this article's abstract. 1,399 students and 66 teachers from 76 classes across 14 college participated in our study. The findings demonstrated a favorable relationship between career abilities and learning motivation, quality of study decision, choice-learning task fit, and internship fit. Professional outcomes benefited from career identity, and career discussion improved career outcomes more than standard interventions did.

Keywords: Career guidance Outcome effects Vocational education

The number of available professions and educational options in Western nations has significantly risen since the 1980s (Organisation for Economic Cooperation and Development [OECD], 2004). As a result, people are under increasing pressure to make decisions while also receiving less and less guidance as a result of individualization in society and the flexibilization of job relationships (Arthur, Inkson, & Pringle, 1999; Beck, 1994). (demonstrated, for example, by the unpredictability of careers; cf. Arthur, Khapova, & Wilderom, 2005). The individual is anticipated to be more self-directed in society at large as well as on the job market (Kuijpers & Scheerens, 2006; Savickas, 2000). (Giddens, 1991). In a service economy, workers' personalities are also playing an increasingly significant role in production (Hochschild, 1983; Sennett, 1998).

College are increasingly realising that they have a big responsibility to help students develop not only academically but also professionally (Krumboltz & Worthington, 1999; Savickas, 2000; Savickas, Van Esbroeck, & Herr, 2005). This is because of the shifting economy and shifting ideas about what constitutes work (Gysbers & Henderson, 2005; Jarvis & Keeley, 2003; Mittendorff, 2010).

Although businesses in Western societies expect new hires to have more knowledge, more skills, and—most importantly—that they will be more intrinsically motivated than they were thirty years ago, ITI- technical vocational education falls short of these expectations. The degree of information and abilities possessed by students is seriously questioned. According to several research, the majority of pupils do not begin college with an inner motivation to learn

(Holt, 1995; Light, 2001; Prawat, 1998; Tinto, 1993, 2000; Zijlstra & Meijers, 2006). Additionally, the majority of ITI- technical students are unsure of their profession choice for at least the first two years of their studies, which contributes to a high dropout rate (Dieleman & Meijers, 2005).

Most students struggle to identify a clear career goal while they are still in college, which results in relatively haphazard educational decisions and a subsequent dropout rate of 30 to 50%. (Eurostat, 2008; National Center for Education Statistics, 2001).

Both policymakers and college administrators are of the opinion that rigorous career education and coaching will lower dropout rates (Company, 2009). Intensive career education and coaching would produce more intrinsically driven students since it will help students develop a career identity, according to a group established by the ITI- technical Minister of Education in 2001. (Geurts & Meijers, 2009). The dedication a person has to particular occupational activities or a particular career is referred to as their career identity (Wijers & Meijers, 1996).

The committee said that having a strong sense of one's career will lead to reductions in dropout rates, better or more stable educational choices, and "qualification gains" (an increase in the number of students who successfully finish secondary or postsecondary vocational education). However, there is currently little proof that these suggested investments in career education and advice would actually lead to greater commitment to employment, which will reduce dropout rates, improve choices, and increase certification levels.

Effects of job growth dependent on education In Western countries, the trait and-factor approach continues to be the main foundation for career advising in education (Irving & Malik, 2005; Watts & Sultana, 2004). The best possible match between a person's skills and the "appropriate" education, training, or employment possibilities is the main goal of this strategy. However, many academics have argued that there is little evidence that the trait-and-factor approach is a practical means of promoting career development; in particular, the usefulness of this approach in unstable labour market conditions has been questioned, as matching presupposes some degree of stability (Krumboltz & Worthington, 1999). Because job routes have become unexpected, it is no longer possible to make career decisions merely on the basis of logic and facts (Guindon & Hanna, 2002; Krieschok, Black, & McKay, 2009; Mitchell, Levin, & Krumboltz, 1999). Although the model has these drawbacks, it nonetheless dominates effect studies. In fact, the trait-and-factor approach provides simple, easy-to-measure components. It is considered that students can effectively match their skills with educational, training, or employment possibilities if they have sufficient knowledge of both the educational, training, and employment needs and of both their own skills, preferences, and personalities. This link is the focus of nearly all effect studies; very few researchers are interested in the process of guidance (Bimrose, Barnes, Hughes, & Orton, 2004).

Research indicates that when it comes to career counselling, the emphasis is primarily on supporting students' academic success rather than helping them plan and get ready for their future employment positions (Meijers, 2008; Parsad, Alexander, Farris, & Hudson, 2003).

Evidence for the impact of career counselling and education on a variety of outcome measures, particularly in relation to decision-making abilities and knowledge about employment and occupations, is there, albeit it is dispersed. In comparison to other possible skills, such as career-related knowledge or the development of a career-related self-concept, career interventions that try to help students plan and prepare for their work roles have the greatest impact on the development of career decision-making skills, according to meta-analyses by Oliver and Spokane (1988) and Whiston, Sexton, and Lasoff (1998). These findings revealed that, compared to a reference group, students who participated in a career-decision making course displayed reduced career-related hesitation at the course's conclusion (McWhirter, Rasheed, & Crothers, 2000).

For instance, Killeen, Edwards, Barnes, and Watts (1999) demonstrated that playing The Real Game, a game that compels players to choose a professional path, results in a greater understanding of labour and jobs. Understanding the structure of the workplace facilitates career decision-making and job transition. Developing a "compact vision of the world of work at a more manageable level of abstraction" is crucial (Dawis, 1996, p. 239). Career interventions that aid people in understanding where they might be happy and content employees can make choosing an employment easier and improve job adjustment (Savickas 2002).

Effective guidance has "immediate outcomes," especially improved knowledge and skills and the capacity to make smooth transitions. It also changes attitudes by fostering self-esteem and confidence, which boosts motivation and makes people more open to exploring new career or educational opportunities (Hughes, Bosley, Bowes, & Bysshe, 2002; Killeen, 1996; Killeen, White, & Watts, 1992).

Research question

While students' behaviours are typically not investigated, the majority of research on the effectiveness of vocational advice focuses on changes in students' knowledge, attitudes, and decision-making abilities. According to Hughes and Karp (2004), research should concentrate on examining the connections between guidance interventions and favourable student behavioural outcomes. This study focused on students' actual career behaviour, or career competences, rather than the impact of college-based career interventions on decision-making abilities, attitudes, or knowledge. According to Kuijpers and Scheerens (2006), career competencies include: putting one's own motivation and aptitudes into action (career action), exploring options for study and work (career exploration), genuinely directing one's own learning process (career reflection), and creating and maintaining a network (networking).

Additionally, a classroom climate that encourages actual job experiences and a discussion of those experiences does help students employ their career competencies (Kuijpers, Meijers & Gundy, 2011). Particularly important have been the discussions pupils have with professionals at work and with their professors about careers. Constructivist learning theory provides an explanation for the significance of discourse in the development of career abilities. It claims that when people converse with themselves and others, meaning is created (Bruner, 1990). The

most advanced constructivist method for job learning is the notion of career creation (Savickas, 2002, 2005). Conversations, according to Savickas, can encourage career development at any level. Three topics—vocational personality, professional adaptability, and life themes—are highlighted in his theory. Savickas established the notion of life themes at the level of subjective career and personal narrative; he positioned life tales in a way that demonstrates how they are the essential strands of continuity that provide meaning to the components of vocational personality and career flexibility. Stories about a person's career highlight their individuality, provide insight into their decision-making process, and illuminate their significance. "Tell how the self of yesterday became the self of today and will become the self of tomorrow" is how career stories are described (Savickas, 2005, p. 58).

The purpose of this study was to look into the connections between job competences and factors including learning motivation, career identity, and the standard of career options. First, we looked at how professional competences and career identity relate to one another, as well as how the career learning environment fits into this picture. It was anticipated that career competencies and career identity would positively correlate (Kuijpers et al., 2011). Second, we looked at the connections between four criteria variables—learning motivation, experienced quality of choice for a study, (3) for learning tasks, and (4) for work placements—and professional abilities and career identity.

As well as examining whether there was a direct connection between career competencies and career identity and the criteria factors, we also looked into whether career competencies and career identity were mediating variables. Because job competences and a career identity give students a sense of direction (Wijers & Meijers, 1996) in both a cognitive and emotional sense, we anticipated a favourable association (Krieshok et al., 2009). Job competences and particularly a career identity are likely to have a favourable impact on learning motivation and the experienced quality of choice because emotions drive attention (Frijda, 1989), which in turn drives learning (Van Woerkom, 2008). However, we did not look into how emotions played a part.

METHOD

Participants

The sample was obtained by a multi-step procedure. In the initial phase, a conference on career guidance and counselling was invited to all 14 prevocational educational (M-GROUP) and all 18 secondary vocational educational (G-GROUP) college in the year 2021. Similar to the other states, Telangana uses the term "technical education" to refer to trade college that teach manual or practical skills, which are typically non-academic. 1 The Department of Education provided funding to help organise the conference. The researchers approached representatives of the participating college and asked them whether they would be interested in taking part in the current study.

18 M-GROUPs (23%) and 17 G-GROUPs (94%) of the attendees gave positive feedback. The instructors and trainees from each college that provided a positive response were then chosen

and invited to participate. The decision of which classes will take part in this study was made by college administrators. There is no information available about the decision-making process used by the managers.

The participating colleges were dispersed across the state and included both inner-city and rural institutions. There were no appreciable variations in size, student population (particularly in terms of gender and ethnicity), or environment between participating college and non-participating college (urban vs. rural).

The survey included a total of 1399 students from 130 courses across the 14 institutions.

10% of the responding students identified as belonging to a minority group, and slightly more than half of them were male. Although this statistic is skewed because some of the students were older than 40 years old, the students' average age was 18 years. Nearly one-third of the students had a health care focus, and nearly two-thirds went to secondary vocational college (G-GROUP). A little over half of the student-trainee reported that their college had counsellors assigned to them, while the remaining students were unsure (all college do have counsellors, although in many college this only becomes apparent to students when they have problems).

Instruments

Career competencies

With the help of a customised questionnaire created for the purposes of this study, career competencies were evaluated. The questionnaires created by Kuijpers and Scheerens (2006) and Kuijpers, Schyns, and Scheerens (2006) for assessing employee skills served as models for this one. Three competencies are listed in the modified questionnaire: networking, which is characterised by interactive behaviour, career-reflection, which is characterised by reflective behaviour. Each item has a different response category (1 = strongly agree, 5 = strongly disagree).

The scales showed a sufficient level of internal consistency (Cronbach's alpha ranged from .82 to .84). Eleven items, such as "In order to find out what I actually think significant in life, I chat to my parents or caregivers," were used to gauge career reflection. An example of one of the fourteen elements used to gauge career formation is, "I do extra things in my training so that I have higher possibility of getting interesting/enjoyable work." Seven elements were included under networking, such as "I chat to knowledgeable people about my future ambitions."

Career learning environment

The degree to which the curriculum was student-centered and practice-based, as well as methods and tools for career guidance, were taken into consideration as variables in this study. A literature review and conversations with college administrators were done to find career techniques and tools. In vocational education, career-choice assessments are widely used, along with curricular techniques include written material that is tailored, one-on-one career conversations with each student, career talks with the entire class, and hiring a career counsellor. Additionally, the Personal Development Plan (PDP) and the Portfolio are two

cutting-edge tools for career counselling that are now in use (PF; Mittendorff, 2010; Mittendorff, Jochems, Meijers, & Den Brock, 2008).

Which of these techniques and tools are being used by teachers was the subject of a questionnaire. Teachers assessed how practice-based and student-centered the curriculum (the programme organisation) was. The degree to which students' concerns, experiences, or specific professional experiences shape the actual learning process is what we mean when we say that instruction is student-centered and practice-based. On a 5-point Likert-type scale (1 = hardly career-oriented, where course offerings and in-class learning take centre stage, to 5 = a more career-oriented curriculum, where students have the ability to make decisions and get practical experience), participants replied to the six items. Students were also questioned about how many internships or job placements they had completed.

Students were questioned about the frequency of career conversations at college and at work in relation to career-oriented guidance. There were six items total for the two scales. A Likert-type scale with five points was employed (1 = "Teachers never ask me what I want to study," 5 = "Teachers ask me very often").

Career Identity

The dedication a person has to a particular career or set of occupational activities was described as having a career identity. In this study, career identity was defined in terms of perceived security in terms of one's self-awareness, present course of study, and future employment, as well as the confidence that results from this. Career identity was measured with an instrument, consisting of eight items

(Cronbach's $\alpha = .81$), which was based on research by Meijers and Wardekker in 1995 and 1995, respectively (2002). On a 5-point Likert type scale, responses to the items fall into several answer categories (1 = strongly agree, 5 = strongly disagree). "My heart is in the work I'm learning to accomplish," as an example.

Learning Motivation

Eight items were used to gauge learning motivation, with a Cronbach's alpha of .79 based on the students' participation in their studies. De Bruijn et al. created this instrument (2005). I work hard at this course of study, for example, and I get started immediately away when I have a task for this course of study.

Career Decision quality

The student's assessment of how well his or her interests and aptitudes match the learning tasks (s)he must complete in college, the job placements (s)he has had, and the study (s)he has selected) is known as the decision quality. Three questions about the degree to which the learning activities, job placements, and decision of study (for example, technical, healthcare, economy, or agricultural) align with the student's aptitudes and preferences) were used to operationalize decision quality.

Situational and personal factors

These variables are divided into two categories: the type of programme the students were enrolled in and the type of college (M-GROUP, G-GROUP-P, and G-GROUP-T). The following categories were used to categorise the programmes: technical studies, economics, agricultural, healthcare, M-GROUP-theoretical, and "other."

Gender, age, internal locus of control, and academic success were personal variables. Using three items, the internal locus of control was assessed (Den Hertog, 1992). Achievements were employed as markers of cognitive abilities with the presumption that one's cognitive abilities may have a role in how much one develops competence (Van Merriënboer & De Croock, 2002). To this statement: "In the past three months, I obtained only passing grades," students were asked to react.

Statistical Analysis

We conducted regression analyses to determine how much the learning and career outcomes for students in M-GROUP and G-GROUP are explained by career competencies and a job-oriented learning environment. The factors describing vocational competencies and the learning environment were utilised as independent variables, while the variables representing career identity, learning motivation, and fit of choice for learning activities, internships, and type of study were used as dependent variables. Gender, age, locus of control, study findings, as well as the nature of the college and the programme were all considered as potential confounders.

Because the data were hierarchical (students inside courses within college), we used the MLWIN v.2.0 tool to perform multi-level regression (Rasbash, Charlton, Browne, Healy, & Cameron, 2005).

As not specifically described in a multi-level regression model, explained variance. This is brought on by the data's variance's several levels of explanation. In a multi-level regression model, explained variance is not formally specified. Confounded with explained variation at a different level, explained variance at one level is in fact a level (Hox, 2002; Snijder & Bosker, 1999). Because of this, we calculated the significance of improvement of various models for each output variable; first, we added career competencies to the basic model; second, we added the learning environment variables to career competencies; and third, we added the potential confounders to career competencies.

RESULTS

The original instrument used to evaluate employees' career competences identified six factors important to career development. The potential for career development is one of these elements. The other five aspects address behaviour and motivation related job development: reflection on capacities, reflection on motives, work exploration, career control and networking (Kuijpers & Scheerens, 2006, pp. 316–317). (Kuijpers & Scheerens, 2006, pp. 316–317). Because it is the more obvious and distinguishing quality, we choose to concentrate on behaviour and

motivation. The five behavioural and motivational components were incorporated in a later questionnaire-based study that was conducted with students from ITI- technical (pre)vocational education. A five-factor model was shown to have failed to produce results that were valid by a confirmatory factor analysis.

As a result, this model was dropped from consideration. The data were well-fit by a three-factor model of career competences ($\chi^2(428) = 7869.28$, $p.01$; RMSEA = .06; CFI = .83; TLI = .81). The investigation revealed that neither work exploration nor career control could be distinguished significantly from meditation on capacities and reflection on motives. The three career competencies listed below for students were as a result determined: (2) career shaping, proactive behaviour that influences the course of one's career by researching jobs, making deliberate decisions, and taking action to ensure that jobs and study choices match one's personal qualities and motives; (1) career reflection, reflective behaviour based on experiences and choices to reveal qualities and motives that are important for the future; and (3) networking is an interactive behaviour used to create and maintain contacts on the internal and external job market with the goal of advancing one's career.

Table 1 shows the student characteristics, college characteristics, and learning environment characteristics using the multi-item scales' Cronbach's alpha. Numbers and percentages are used to describe the study group's organisational structure with regard to individual and environmental factors. The instructor of the pupils evaluates the strategies employed and the structure of the programme. The fact that some teachers did not complete the questionnaire accounts for the lack of information on these variables. All scales exhibited a satisfactory Cronbach's alpha (i.e., [.70]), with the three-item Locus of Control Scale having the lowest alpha at only .62. The averages and standard deviation of the final columns of the variables are depicted.

Table 1: Career competencies, learning environment, personal and situational characteristics, and out - come variables (n = 1399)

Learning environment characteristics	N	%	% missing	Cronbach's alpha	Number items	Mean	SD
Methods used ^a							
Test	90	6.43	13.11	—	—		
Career method	216	15.49	13.11	—	—		
Class discussion	129	9.28	13.11	—	—		
Problem discussion	316	22.64	13.11	—	—		
Individual discussion	450	32.21	13.11	—	—		
Student counselor	711	50.87	.80	—	—		
Project ^a	70	5.06	11.03	—	—		
PF ^a	529	37.93	11.46	—	—		
PDP ^a	287	20.52	11.46	—	—		
Program organization ^a			11.03	.76	6	2.50	.76
Internships			.00	—	—	1.80	1.12
Career dialogue at College			.66	.83	6	2.58	.79

Career dialogue on the job			6.34	.88	6	3.49	.82
Student characteristics							
Gender Male	772	55.18	2.92	–	–		
Ethnicity Non-ITI-technical	150	10.74	5.40	–	–		
Age			7.80	–	–	18.51	4.70
Internal locus of control			.06	.62	3	2.16	1.28
Learning achievement			1.11	–	–	3.18	1.26
Situational characteristics							
College type							
M-GROUP	512	36.58	.00	–			
G-GROUP-P	195	13.97	.00	–			
G-GROUP-T	678	48.50	.00	–			
Other/unknown	02	0.09	.00				
Specialization							
Technical	212	15.15	.00	–	–		
Healthcare	415	29.72	.00	–	–		
Economy	237	17.00	.00	–	–		
Agriculture	125	8.97	.00	–	–		
M-GROUP-theoretical	198	14.15	.00	–	–		
Rest	209	15.00	.00	–	–		
Career competencies							
Career reflection			1.01	.82	11	3.35	.56
Career forming			.01	.84	14	3.01	.55
Career networking			.37	.82	7	3.05	.69
Outcome measures							
Career identity			.83	.81	8	3.36	.70
Learning motivation			.01	.79	8	3.31	.63

Table 1 continued

Learning environment characteristics	<i>N</i>	%	% missing	Cronbach's alpha	Number items	Mean	SD
Fit of choice for learning tasks			.94	—	—	2.93	1.05
Fit of choice for internship			2.60	—	—	3.28	1.17
Fit of choice for College direction			.51	—	—	3.61	1.01

^a Measured by instructor

Table 2 Correlations between input, throughput and output variables

	1	2	3	4	5	6	7	8	9	10	11
1. Program organization	1.00										
2. Career dialogue at College	.18*	1.00									
3. Career dialogue on the job	.09*	.24*	1.00*								
4. Career reflection	.10*	.20*	.28*	1.00							
5. Career forming	.09*	.35*	.24*	.59*	1.00						
6. Career networking	.05*	.24*	.28*	.61*	.68*	1.00					
7. Career identity	.08*	.23*	.24*	.24*	.38*	.31*	1.00				
8. Learning motivation	.03	.23*	.13*	.16*	.26*	.13*	.44*	1.00			
9. Fit of choice for learning tasks	.08*	.18*	.20*	.14*	.23*	.17*	.58*	.37*	1.00		
10. Fit of choice for internship	.10*	.25*	.13*	.17*	.26*	.17*	.27*	.21*	.26*	1.00	
11. Fit of choice for college direction	.07*	.13*	.23*	.14*	.21*	.19*	.27*	.12*	.2**	.35*	1.00

* $p < .01$ (two-tailed)

Table 2 presents a correlation vtable of the career-related input, throughput, and output variables in order to demonstrate some indication of convergent and discriminant validity. Since the career competences are a component

of a second order latent variable called career learning, it makes sense that they are most strongly correlated.

The items within the variables (Cronbach's alpha) correlate more strongly than the items between the variables, despite the professional competencies correlating. As a result, we can believe that the variables employed in the study measure several ideas since this suggests discriminant validity.

Table 3 displays the multi-level regression coefficients and standard errors for each of the independent variables. The z-scores and standard errors of the independent variables are displayed in this table.

If the standard error (described in parenthesis) times 1.96 is less than the z-score, the independent factors significantly influence (or explain) the scores of the dependent variable with a p value of .05. The dependent variables' percentage of explained variance ranges from 24% (fit of task selection) to 41% (fit of study selection), which is indicative of a medium- to large effect size (Cohen, 1988). Despite being statistically significant, the variance caused by differences in the college accounts for just around 1% of the total variance. A small-medium effect size is reflected by the statistical significance of the variation attributable to class differences, which ranges between 4 and 10%. (Cohen, 1988).

The findings demonstrated that career competences account for the variation in job identity, learning motivation, and task fit scores. With moderate effect sizes, career formation is significantly correlated with these three outcomes. Based on their understanding of themselves and their work, students who consider their professional conduct to be proactive (career developing) appear to have confidence in their future careers (career identity). They chose learning assignments that matched their capacities and motivation since they are dedicated to their current studies (learning motivation) (fit of choice of learning tasks). Networking has been shown to improve career identity ratings, but it has a detrimental impact on learning motivation.

The fit of students' selections and the variance in scores for learning motivation are both found to be significantly explained by career identity. Students who have a job identity (i.e., who feel sure in their future career) report being more dedicated to their studies and choosing learning challenges, internships, and study types that are compatible with their motivation and capabilities.

The findings indicated that many elements of the learning environment account for the variation in career outcome scores. Most of the criterion factors were influenced by the career discussions that took place at college and in the workplace (the work placement).

In order to understand the differences in professional identification, learning motivation, and appropriate selections of learning activities and style of study, dialogues with students about their aptitudes, motivations, and prospective careers are held at college. The formation of a

career identity and more informed choices for work placement and academic studies are two things that can be discussed with students at the workplace. Additionally, a practice- and inquiry-based curriculum (programme organisation) emphasises the experienced fit of subject matter selection and study. The fit between a student's aptitudes and a work placement is greater for students who have more experience with work placements.

Contrary to expectations, the findings indicate a negative association between tests and career identity as well as a negative relationship between career strategies and learning motivation. There is no proof that career tests and methods influenced good decisions. Additionally, tools like the personal development plan (PDP) and portfolio (PF) do not appear to have an effect on professional success. Additionally, it appeared that the type of talk (i.e., whether it was a discussion in the classroom, a debate about college issues, or an individual chat) had no impact on the criteria variables. Even individual talks and conversations about problems have a negative impact on learning motivation. The decision of where to go to college is also negatively correlated with individual dialogues.

In light of the findings, it would appear that the format of the talk, the person who facilitates it, and the presence of a student counsellor did not significantly improve learning and career outcomes. The conversation's topic, specifically the career, did, however, influence the results in terms of scoring. The majority of the variables considerably benefit from career discussions, whether they occur in the classroom or at work, with small to moderate impact sizes.

Career identity was positively correlated with career competencies and career discussion, according to the data broken down by criteria variable.

The primary factors influencing learning motivation were career identity, career formation, and the in-class career discourse. The formation of job identities, networking, a practice- and inquiry-based curriculum, and the career debate at college all contributed to the explanation of the fit or choice of learning activities. Experience from prior placements and discussions about careers at work helped to explain the fit of the work placement option. The degree to which the curriculum was practice- and inquiry-based as well as the career discourse, both at college and during the internship, might both be used to explain the fit of the study choice.

When compared to students in M-GROUP college, G-GROUP students have much lower learning motivation means. Additionally, M-GROUP students have a worse decision match for internships than students from the theoretical track of G-GROUP college, despite having lesser means on career identification. Pupils with a technical

Table 3 Results of multilevel regression analyses with career identity, learning motivation and fit of choice as dependent variables

	Career identity	Learning motivation	Fit of choice for learning tasks	Fit of choice for internship	Fit of choice for college direction
Career identity		.33 (.02)*	.15 (.02)*	.19 (.02)*	.56 (.02)*
Career competencies					
Career reflection	.10 (.02)*	-.01 (.02)	.02 (.03)	.03 (.03)	-.02 (.02)
Career forming	.24 (.03)*	.15 (.03)*	.13 (.03)*	.05 (.03)	.03 (.03)
Networking	.10 (.03)*	-.10 (.02)*	.00 (.03)	.02 (.03)	-.02 (.02)
Method (w.r.t. none) ^{a,b}					
Test	-.26 (.11)*	.16 (.13)	.10 (.13)	-.03 (.14)	-.01 (.08)
Career method	.08 (.12)	-.31 (.14)*	.16 (.14)	.17 (.16)	-.06 (.08)
Class discussion	.05 (.18)	-.23 (.14)	.18 (.13)	.11 (.15)	-.09 (.08)
Problem discussion	.12 (.10)	-.25 (.12)*	.23 (.12)	.08 (.14)	-.13 (.07)
Individual discussion	.04 (.10)	-.24 (.12)*	.14 (.12)	-.02 (.14)	-.15 (.07)*
Student counselor (w.r.t. none) ^b	-.03 (.04)	.06 (.04)	.04 (.04)	.00 (.04)	-.01 (.03)
Project (w.r.t. none) ^{a,b}	-.02 (.15)	-.17 (.17)	-.33 (.18)	-.05 (.21)	-.17 (.11)
Instruments (w.r.t. none) ^{a,b}					
PF	.03 (.06)	-.01 (.01)	-.12 (.07)	-.09 (.08)	.02 (.05)
PDP	-.02 (.09)	-.08 (.10)	.14 (.10)	-.01 (.12)	.05 (.06)
Program organization ^a	.01 (.03)	.05 (.04)	.08 (.04)*	.07 (.04)	.05 (.02)*
Internships	.02 (.02)	.01 (.02)	-.00 (.02)	.08 (.02)*	.02 (.02)
Career dialogue					
College	.07 (.02)*	.10 (.02)*	.13 (.02)*	-.01 (.02)	.04 (.02)*
Practice	.13 (.02)*	.03 (.02)	.02 (.02)	.15 (.02)*	.06 (.02)*
Gender (boy w.r.t. girl) ^b	.06 (.05)	-.40 (.05)*	-.05 (.05)	-.11 (.05)*	-.11 (.04)*
Age	.07 (.03)*	.04 (.03)	-.04 (.03)	-.10 (.03)*	-.03 (.02)
Ethnicity (non--ITI-Technical w.r.t. ITI Technical) ^b	.10 (.06)	.26 (.06)*	-.10 (.07)	-.24 (.06)*	-.11 (.06)
Internal locus of control	.14 (.02)*	.08 (.02)*	.04 (.02)	.01 (.02)	.00 (.02)
Learning achievement	.12 (.02)*	.06 (.02)*	.05 (.02)*	.01 (.02)	.04 (.02)*
G-Group - P (w.r.t. M-Group) ^b	-.03 (.11)	-.40 (.12)*	-.07 (.13)	.27 (.14)	-.03 (.09)
G- Group-T (w.r.t. M-Group) ^b	-.24 (.08)*	-.34 (.09)*	.01 (.09)	.28 (.11)*	.01 (.06)
Technical (w.r.t. 'rest') ^b	-.04 (.09)	.32 (.10)*	-.26 (.10)*	-.19 (.12)	-.09 (.06)
Health care (w.r.t. 'rest') ^b	.12 (.08)	-.02 (.09)	-.25 (.09)*	-.41 (.11)*	-.12 (.06)*
Economics (w.r.t. 'rest') ^b	-.28 (.08)*	.07 (.10)	-.20 (.10)	-.13 (.12)	-.24 (.01)*
Agriculture (w.r.t. 'rest') ^b	.05 (.12)	.04 (.15)	-.05 (.15)	.19 (.17)	-.04 (.11)
College variance	.00 (.00)	.01 (.01)	.01 (.01)	.01 (.01)	.01 (.00)

Table 3 continued

	Career identity	Learning motivation	Fit of choice for learning tasks	Fit of choice for internship	Fit of choice for college direction
Class variance	.04 (.01)*	.07 (.02)*	.06 (.02)*	.10 (.02)*	.00 (.00)
Student variance	.70 (.02)*	.65 (.02)*	.76 (.02)*	.72 (.02)*	.59 (.02)*
Total explained variance (%)	31	35	24	29	41
Model improvement through addition career competencies	215* (df 3)	116* (df 3)	118* (df 3)	99* (df 3)	106* (df 3)
Model improvement through addition learning environment to personal, situational and career competencies variables	447* (df 13)	383* (df 13)	654* (df 13)	668* (df 13)	660* (df 13)

Note N = 969, 969, 962, 951 and 964, respectively. All continuous variables were transformed to z-scores. Regression coefficients are shown, with the standard errors between parentheses

* $p < .05$

^a Evaluated by the instructor

^b Categorical variable

specialisation outperform the "regular" students in terms of learning motivation but score less well on choice fit when it comes to learning assignments. Less option was available to health care students in terms of learning assignments, internships, and study path. Students majoring in economics demonstrated a worse sense of their professional direction and felt their internship and coursework were less suited to them. Comparatively to students in the "rest category," students in agriculture find that their internship of choice fits them better.

Higher learning achievement scores were positively correlated with all outcome measures, with the exception of the fit of the work placement of personal variables. Career identity and learning motivation were strongly correlated with higher internal locus of control scores. Students who are not ITI- technical appear to be more motivated to learn but less suited to their preferred career placements. Girls were more motivated to learn and experienced a better fit of choice of work placement and study than boys, while older students had a stronger career identity but experienced less fit of choice of internship than younger students.

We added career competences to the original model in order to analyse the precise contribution of input and throughput career factors as a set to the output variables.

In addition to the personal and situational elements, we also included the learning environment variables to the career skills. Table 3 shows the v^2 values and degrees of freedom. By include

the career competences in the basic model, the model was considerably enhanced for all outcome variables (p.001). The learning environment variables shown to strongly contribute to all output variables when the career competencies, as well as personal and situational variables, were added.

The addition of the learning environment variables caused a significant (p.001) change in the model. Thus, it is clear that the learning environment affects students' commitment to particular professional activities or careers, their desire for learning, and the fit between their career choices.

DISCUSSION

In-depth career education and counselling that helps student-trainee to acquire job competences, according to policymakers and college administrators, will produce more intrinsically driven students since it will help students develop a career identity. They anticipate that having a strong sense of one's profession will lead to college and employment choices that are more in line with one's preferences and abilities. We looked at whether these connections are real in this article.

In this study, the hypothesis that career competences and career identity are associated was confirmed. Networking and career formation had a favourable relationship, but career reflection had a negative relationship. The idea that students who have not yet acquired a job identity are more inclined to reflect on their aptitudes and intentions could be used to explain the negative link between career reflection and career identity. The scores on the variables learning motivation and the quality or fit in learning tasks in respect to individual aptitudes and desires were also explained by career formation. Additionally, there is a relationship between these factors, as well as the fit or quality of experience in study choice and job placement. College-based career interventions that promote the creation and utilisation of careers beyond the improvement of career decision-making abilities and career knowledge, competences had favourable consequences. Our research revealed that elements of the career learning environment with comparable impact sizes might be used to make up for the effects of personal characteristics on career success. For instance, older pupils had a stronger sense of their career. Younger children may need to have more career discussions at college and in practise to make up for this gap. Additionally, employment placements chosen by guys, younger students, and students who are not ITI- technical did not match the other categories as well. You might make up for it by giving them more placement opportunities and/or career discussions during their internships. In order to make up for their individual strengths in job identification and learning motivation, students with weaker internal loci of control and lower academic accomplishment may require more career conversations in the classroom.

The findings revealed that a typical career approach, which is characterised by a lack of discussion (Kuijpers et al., 2011), was ineffective in fostering professional identity, learning motivation, or an understanding of fit between aptitudes and choices for work placements and studies. However, career identity development, learning motivation, and experience-based

quality of choices were all influenced by a career debate that took place at college and in the workplace (i.e., the work placement).

Learning and career outcomes were not improved by the conversation's structure, the conversation's facilitator, or the presence of a student counsellor. However, the conversation's topics did influence favourable results. These findings were consistent with those of Masdonati, Massoudi, and Rossier's (2009) study, which found that in-person career counselling is a very effective intervention strategy. More precisely, they discovered that the efficiency of career counselling is significantly influenced by the nature of the working connection between counsellor and client. They argued that in-person counselling should be viewed as more than just a cognitively oriented intervention.

Our findings corroborated this idea: a conversation about the personal significance of real-life work experiences—in which emotions are acknowledged—contributes favourably to the quality of the working alliance. A working alliance is defined as the outcome of an understanding between the counsellor and student regarding the objectives of the counselling, an understanding regarding how to achieve these objectives, and the growth of a personal relationship between them.

The findings supported Savickas' (2002, 2005) career construction hypothesis as well. According to Savickas, during career dialogues, each person creates their own career life themes.

However, according to McIlveen and Patton (2007), his theory does not currently provide a psychological justification for how people engage in a process of self-construction through "storying." Our findings indicated that this process is enhanced by real-world experiences gained during work placements; the more exposure students have to "real job," the more successful a career dialogue turns out to be. However, several studies shown that teachers find it extremely challenging to engage their pupils in a conversation regarding actual work placement experiences (Winters, Meijers, Kuijpers, & Baert, 2009; Winters, Meijers, Lengelle, & Baert, 2012; Winters et al., in press).

Due in large part to the fact that the dissemination of uncontested knowledge serves as the central axis around which everything revolves, the culture of college and, consequently, of discussions between instructors and students, is still fundamentally monological (Gatto, 2009). Therefore, the opportunities instructors have to create a new career identity play a significant role in the fulfilment of a great career learning environment (Meijers & Lengelle, 2012).

There were at least two drawbacks to this study. First, using a self-report method made it nearly impossible to distinguish between actual career behaviour and attitudes, despite the fact that we wanted to measure actual career behaviour in contrast to decision-making skills, attitudes, or knowledge. This is because participants must evaluate their own behaviour in order to rate the items.

Career exploration and reflection, which are closely related to decision-making abilities, were included among the career competencies employed in this study. There are limits between

skills, attitudes, and knowledge and actual career behaviour, even though the way we measured career competencies is a step away from a wholly cognitive approach. A behavioural method including outside observers would be required to gauge actual career behaviour.

A second drawback of this study is that, because it was cross-sectional in nature and without a control group, no convincing proof of effectiveness could be provided. Additionally, the results' usefulness was constrained by the lack of thoroughly tested equipment.

The career competencies and career learning environment on the one hand, and career identity, learning motivation, and the experienced quality of choices on the other, did, however, show correlations between them, as indicated by the explained variance of the criteria variables. More studies utilising well-validated measurement methods should be carried out about the effects of vocational training in sizable representative samples in order to be more certain of the nature and magnitude of these relationships. Furthermore, more advanced conceptual models must be created.

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